



NEWARK SLOUGH  
LOOKING WEST FROM THE  
U.S. FISH AND WILDLIFE HEADQUARTERS HILLTOP  
FREMONT, CALIFORNIA

# **CARGILL SALT'S MAINTENANCE WORK PLAN REPORT**

**2002 – 2003**

**EIGHTH REPORT**

**April 2002**



# CARGILL SALT

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CALIFORNIA REGIONAL WATER

<sup>KHV</sup>  
APR 24 2002

QUALITY CONTROL BOARD

April 19, 2002

partial  
copy for  
only RWC

Lt. Col. Timothy S. O'Rourke  
District Engineer  
U.S. Army Corps of Engineers  
San Francisco District  
333 Market Street, 8th Floor  
San Francisco, CA 94105-2197

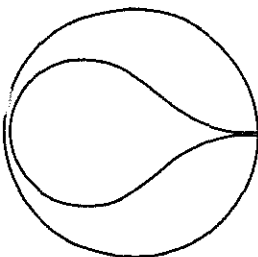
Mr. William Travis  
Executive Director  
San Francisco Bay Conservation and Development Commission  
50 California Street, Suite 2600  
San Francisco, CA 94111

Subject: Cargill Salt Maintenance Report  
Cargill Salt Files: 2000.005:0a and 2000.012:131

Dear Colonel O'Rourke and Mr. Travis:

I am transmitting the report for Cargill's proposed maintenance of our Solar Salt Operations for our fiscal year 2002-2003, which begins on June 1, 2002. This is Cargill's eighth annual report to the regulatory community and interested members of the public. This has been reviewed in a preliminary fashion by staff at both the Corps of Engineers and the Bay Conservation and Development Commission and is now being sent out to a distribution list that includes other agency staff as well as interested members of the public.

Both agencies authorized the distribution of the report for agency and public comment. What is included in this submittal is (1) a tabular summary of our proposed activities (matrix); (2) the graphic display of



the activities (maps); (3) a narrative that supplements the first two documents; and (4) an addendum to the 2001/02 work plan. Your review and questions are encouraged. Please feel free to direct questions to the Cargill staff, either Bob Douglass (510-790-8156) or Lori Johnson, our public affairs manager (510-790-8157). Formal inquiries and written comments should be sent to both:

Robert Quebedeaux, Regulatory Functions Branch  
U.S. Army Corps of Engineers  
San Francisco District  
333 Market Street, 8th Floor  
San Francisco, CA 94105-2197  
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and

Andrea Bennett, Coastal Program Analyst  
San Francisco Bay Conservation and Development Commission  
50 California Street, Suite 2600  
San Francisco, CA 94111  
(415) 352-3626

Last year's report focused on a number of replacement activities that involved reconstruction, remodeling and enlargement of a number of significant infrastructure components for the solar salt system. Construction on those activities will continue through the next few months and there have been a number of changes in the final details. As a result, for the first time in these reports, an addendum section has been added to provide an update on the changes from the approved 2001-2002 work plan that resulted from new construction techniques and the condition of the existing infrastructure. This was added at the request of the staff at BCDC. The construction activities from last year's submittal will continue into late 2002 and have influenced this year's report. A letter to the BCDC staff listing the various items that

needed further clarification or subsequent approvals from staff is included in the addendum section.

As with last year's report, our proposed activities for the construction period of June 1, 2002 to May 31, 2003 reflect an emphasis on the infrastructure of the solar salt system. Most of our previous work tasks have been located in the Plant 1 and Plant 2 systems. We did, however, report some proposed activities in the Redwood City Plant system and that plant is our focus for the upcoming year. Compared to the Newark facility, there is a relatively small area in which to manage brines and bitters in Redwood City. In order to move bitters and dissolved sodium chloride back to the Newark facility, we will need the capability of moving brines and bitters simultaneously, often in opposing directions through small ponds or dual pipelines. What follows is a very brief discussion of what we feel are significant or noteworthy projects that are included in this year's report:

1. Construction of a 16-Inch Brine Line Through the Redwood City Plant. This line, over 25,000 feet in length, is the western segment of the 16-inch line that will ultimately deliver bitters and brines from the Redwood City Plant to Plant 2 in Newark.
2. Install and Put into Service New Redwood City Brine Pumps. In order to "push" or pump brines and bitters back to the Newark Plant, additional pumps will be placed in the heart of the Redwood City Plant site, at two locations, to provide sufficient pumping capacity to reach the new infrastructure on the east side of the Dumbarton Strait.
3. Construct a Division Levee in the Belle Haven Donut, Adjacent to Pond 7c, Redwood City. This 800 lineal foot levee will assist in the simultaneous movement of brines and bitters and allow more efficient management of both liquids.

4. Construct a Division Levee in Pond S5, in Redwood City. This levee, which will be over 1,000 feet long, will also allow for the simultaneous movement of brines and bitterns.

As noted, some of last year's work is still underway and will continue into the 2002-2003 maintenance year. The most typical example was the work listed for eight different pump platforms. We indicated that we would "construct new platform(s)." In every instance, this work was to support new pumps for better pumping efficiencies and control of brines. In some instances we indicated pipeline work associated with the platform. The platforms are now approximately 85% complete. This year the work tasks indicate that new pumps will be installed and the existing electrical services reconnected to serve the new pumps, which will then be connected to the pipelines recently installed. In some cases decking is being installed after the new pumps are in place. The Addendum to this report will provide more detailed information.

During the last year's construction cycle, we found the existing brine line crossing of Plummer Creek did not have sufficient capacity to carry the returned brines and bitterns from Redwood City. After a review of alternatives, we found the option with the least impact was a wooden trestle that will carry both a brine line and the new bittern line. The Alameda County Flood Control District has issued conceptual approval of the trestle. That allowed us to begin the permit amendment process with the San Francisco Bay Conservation and Development Commission. Details concerning the permit amendment for this project are included the table, the supporting text, and in the addendum to last year's plan in this report.

Typically, past reports focused on the activities of our dredge, "The Mallard," and the mandated Best Management Practices that ensure minimal impacts when entering and exiting dredge locks. Currently, the dredge is working in the Baumberg system, in support of the Eden

Landing Restoration project. In conjunction with the sale of the former Baumberg Plant site Cargill donated 400 hours of dredge time to assist in bringing tidal waters to the restoration site. The dredge entered the Baumberg system via a dredge lock at Pond 8a. That lock was constructed in 1986 and replaced a lock in a more sensitive location. The entry, from an adjoining flood control channel, was very well done. Agency staff have reviewed the lock and found negligible disturbance to the surrounding marsh, the result of continued application and improvement of our "Best Management Practices," or BMPs.

For purposes of this report, we anticipate the dredge remaining in the Baumberg system for the next few months. Following completion of the dredge's work in the new North Creek tidal channel, the dredge will move a short distance to the north and begin work on an additional, new tidal channel that will parallel Mt. Eden Creek. This work will be done in cooperation with the California Department of Fish and Game and the East Bay Regional Park District, with Cargill donating 400 hours of dredge work.

More detail for each of these projects is provided in the accompanying narrative section of this report. In addition, more detailed plans for construction will be made available for review by the Commission and Corps staffs. The work listed in this report, our proposed 2002-2003 maintenance year, is limited to work designed to facilitate and improve continued solar salt production with an emphasis on the interoperability of our Redwood City and Newark plants.

Comments will be reviewed and evaluated by the agency staff and resolved with Cargill Salt before the maintenance plan is approved. Although Cargill would like to receive authorization by June 1, the review period required by our permits may extend that approval date.

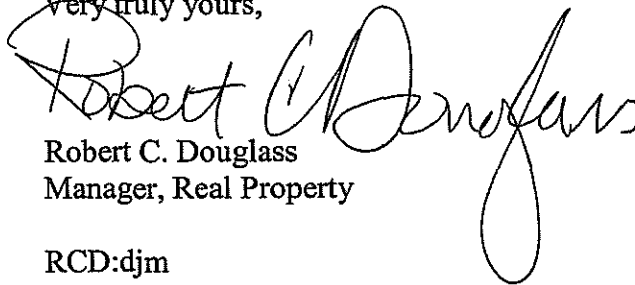
As before, the report summarizing currently authorized activities (maintenance year 2001-2002) will be sent to you in August of this

year. That report will contain detailed information relating the success of the horizontal drilling equipment used recently.

Enclosed is a postage-paid reply card to notify us if you do not wish to receive future mailings or if there is someone else in your organization who should be receiving these semi-annual reports.

Thank you for your interest in our operations.

Very truly yours,

A handwritten signature in black ink, appearing to read "Robert C. Douglass". The signature is fluid and cursive, with a large loop at the end of the last name.

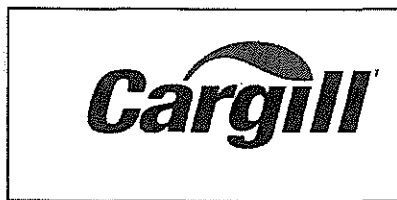
Robert C. Douglass  
Manager, Real Property

RCD:djm  
Enclosures

Cc: CDFG  
RWQCB  
USFWS, Sacramento  
USFWS, DSFBNWR, Fremont  
Public Comment Mailing List



# Table of Contents



**1**

WORK PLAN 2002 - 2003

**2**

MAPS-PROPOSED MAINTENANCE  
2002 - 2003

**3**

SUPPORTING TEXT

**4**

ADDENDUM 2001 - 2002

**5**

DISTRIBUTION LIST



**Cargill Salt Work Plan 2002-2003**  
**San Francisco District Corps of Engineers**  
**Permit 19009E98**  
**San Francisco Bay Conservation and Development Commission**  
**Permit 4-93**

**Additional Comments**

- ◆1. The dredge work currently (April 2002) underway in the Baumberg Tract is in support of the California Department of Fish and Game's Eden Landing Restoration project. CDFG is operating under Corps of Engineers' permit 24627S and BCDC permit 2-01 for this work. Cargill donated 400 hours of dredge time and will be working under contract with the California Wildlife Foundation for the remainder of the work. Cargill's dredge, the *Mallard*, is dredging a tidal access channel along the historic alignment of North Creek. The dredge will also dredge a parallel tidal access channel to Mt. Eden Creek through Pond 10, immediately north of the creek. The creek is heavily silted in and covered with an extensive growth of pickleweed and other marsh grasses and vegetation. The new tidal channel eliminates potential adverse impacts associated with dredging Mt. Eden Creek.
- ◆2. In order to access Pond 10, the dredge lock at the bay's edge of Pond 10 will be rehabilitated and used for entry and exit.
- ◆3. Cargill successfully used a new technology called directional drilling when replacing the slough crossing at Newark and Mowry Sloughs in 2001-2002. This technique avoided even the temporary impacts associated with traditional dredging and replacement of dredged muds to install slough crossings for brine lines. The crossing at Ravenswood Slough for the 16-inch HDPE brine line that will connect the Redwood City plant to the Newark plant will be installed using directional drilling.
- ◆4. In order to connect the two plants, a 16-inch HDPE pipeline is being installed on the shoulder of salt pond levees. This line will extend from the middle of the crystallizer system to Pond 2, near the Dumbarton Bridge. From that point it will be connected with a brine line installed in 2001-2002 that will ultimately allow transmission of brines through the existing Transbay pipeline to Cargill's Newark plant site and system.
- ◆5. The Coyote Intake Pump and Platform project will also necessitate a BCDC permit amendment since the platform extends over Alameda Creek, which is part of the Commission's San Francisco Bay jurisdiction. This work was noticed last year and is partially complete, pending the permit amendment approval.

- ◆6. As part of Cargill's plans to enhance the intake of brines, better manage pond depths and brine flows, additional brine conveyance structures are being added to the system. These range from simple gaps in levees, which also create protected bird islands to installation of new pipes. The new, twin 36-inch HDPE siphons across Newark Slough, which replaced an outdated unserviceable siphon, have greatly increased the flow of brines through the Plant 1 system. These new structures allow for the continuous movement of brines.
- ◆7. The new 36-inch brine line across Mowry Slough provides for more uniform flows through Ponds 1 and 3 in the Plant 2 system. Historically, these ponds received high salinity brines from the washing of crystallizers in Plant 2. New harvesting techniques will ultimately reduce the need to wash crystallizers. By adding a short segment to the discharge line, similar strength brines can be directed into Ponds 1 and 3 as in the past to keep salinities at historic levels.
- ◆8. While directional drilling has proved extremely successful, it is not suitable for all locations. The crossing at Plummer Creek is one of those areas. The construction of a simple wooden trestle to carry the two brine lines avoids any trenching through mudflats and marsh. A permit amendment is being processed by BCDC for this work and we believe this trestle is covered under a nationwide permit for the Corps of Engineers.

REDWOOD CITY							
Task No.	Ponds Involved	Activity1 / Function	Duration of Activity	COE2	BCDC2	Size/Scope	Comments
65	1-10, 7A, 7B, 7C, 8E, 8W, 9A, & SF2	Grading	Ongoing May through August	N/A	2b		Routine grading of levee top to provide vehicle access. Where present, grading will not occur in active WSP/seabird nesting areas.
66	1	Rip-rap	Ongoing through August	1e	1c	2,270 lf, 1,300 cy	Maintenance of existing rip-rap areas.
67	2	Install pump and electrical panels	Ongoing	N/A	2b		Install new 2,000 GPM horizontal pump and electrical panels on existing new platform.
68	2	Install new electrical service	Ongoing	N/A	2b		Install new electrical service (PG&E) to existing new pump platform.
69	2 and 3	Directional drilling for 16" HDPE brine line		2f	Permit Amendm ent requested		Using new directional drilling method, open trenching of Ravenswood Slough will be avoided. ♦3
70	3	To transfer bittern and brines from RWC Plant ponds to Plant 2 Newark ponds	Ongoing Jun thru Apr			12,150 lf	Install new 16" HDPE pipe to return Redwood City Plant bitterns to Newark. Pipe to be placed on edge of levee. ♦4
71	4	Discing	Ongoing May through August 2002	N/A	2b		Discing dredged muds placed on levee top.

REDWOOD CITY							
Task No.	Ponds Involved	Activity1 / Function	Duration of Activity	COE2	BCDC2	Size/Scope	Comments
72	4	Rip-rap	Ongoing through August 2002	1e	2a	100 lf, 120 cy	Maintenance of existing rip-rap areas.
73	5	Discing	Ongoing May through August 2002	N/A	2b		Discing dredged muds placed on levee top.
74	S5	To transfer bittern from RWC Plant ponds to Plant 2 Newark ponds	Ongoing Jun thru Apr	N/A	2c	3,700 lf	Install new 16" HDPE pipe to return Redwood City Plant bitterns and brines to Newark. Pipe to be placed on edge of levee. ♦4
75	S5	To transfer bittern from RWC Plant ponds to Plant 2 Newark ponds	Ongoing	N/A	2c	20' x 20' Platform	Construct new platform next to Belle Haven Pump and install 2,000 GPM horizontal pump to return Redwood City bittern to Newark. ♦4
76	S5	New cross levee with 'Mallard' or land based equipment	TBA	1a	2e	1,200 lf 2,600 cy	Construct new cross levee with material from pond. Return Redwood City brines to Newark, Plant 2 (2-way flow).
77	S5	Discing	Ongoing May through August	N/A	2b		Discing dredged muds placed on levee top.
78	PP-7A	General levee maintenance	Ongoing	2a	2a	3,000 lf	Build-up low areas as needed on cross levee 7A - 8W with land-based equipment.

## REDWOOD CITY

Task No.	Ponds Involved	Activity1 / Function	Duration of Activity	COE2	BCDC2	Size/Scope	Comments
79	PP-7A	General levee maintenance	Ongoing	2a	2a	1,300 lf	Build up low areas as needed on cross levee (7A & 7C), (7A & 7B) with land-based equipment.
80	PP-7B	General levee maintenance	Ongoing	2a	2a	1,000 lf	Build up low areas as needed on cross levee 7B - 7C with land-based equipment.
81	PP-7C	Pipeline will allow two pumps to work simultaneously and pump in different directions.	Contractor work July through October 2002	2g	2c	200 lf	Install 200 lf of 24" pipe to allow 2-way flow in Belle Haven Donut. Improve ability to manage brines and bitterns simultaneously in a confined area.
82	PP-7C	New gate will allow better internal circulation.	Contractor work July through October 2002	2c	2b		Install new 36" x 25' pipe and screw gate into existing donut levee in order to improve system operability.
83	PP - 7C	To transfer bittern from RWC Plant ponds to Plant 2 Newark ponds	Ongoing Jun thru Apr	N/A	2c	3,700 lf	Install new 16" HDPE pipe to return Redwood City Plant bitterns and brines to Newark. Pipe to be placed on edge of levee. ♦4

REDWOOD CITY							
Task No.	Ponds Involved	Activity1 / Function	Duration of Activity	COE2	BCDC2	Size/Scope	Comments
84	PP - 7C	To transfer brines/bittern from RWC Plant ponds to Plant 2 Newark ponds	Ongoing Jun thru Dec	2g	2a	1,000 lf	Construct division levee to split Belle Haven donut in half. Land based equipment. System improvements to return Redwood City brines to Newark ponds.
85	PP - 7A & 8W	To transfer brines/bittern from RWC Plant ponds to Plant 2 Newark ponds	Ongoing Jun thru Apr	N/A	2c	5,800 lf	Install new 16" HDPE pipe to return Redwood City Plant bitterns to Newark. Pipe to be placed on edge of levee.
86	8E	General levee maintenance	Ongoing	2a	2a	4,000 lf	Build up levee berm with land-based equipment.
87	9A	General levee maintenance	Ongoing	N/A	2a	300 lf	Spot key levee as needed.
88	9A	Improve pump hydraulics.	Ongoing	2d	2d		Clean bittern deep storage sump of solids. So solids to be discharged into BP 9.
89	10	General levee maintenance	Ongoing	2a	2a	150 lf	Spot key levee as needed.
90	10	Discing	Ongoing May - August	N/A	2b		Discing dredged muds placed on levee top.



## REDWOOD CITY

Task No.	Ponds Involved	Activity1 / Function	Duration of Activity	COE2	BCDC2	Size/Scope	Comments
91	10	Construct small berm for desalting of a portion of Pond 10.	June 02 to Sept 02	2g	2f	2,400 lf	Berm to be used to separate eastern portion of Pond 10 as dried salt compounds are dissolved and pumped into RWC plant for further processing.
92	SF2 (inside levee)	Rip-rap	Ongoing through August	1e	2a	100 lf, 120 cy	Maintenance of existing rip-rap areas.
93	Shipping pier	Maintenance	Ongoing	1a	1d	TBD	Repair various pilings, dolphins, walkways as needed.
94	CX 9	To transfer bittern from RWC Plant ponds to Plant 2 Newark ponds	Ongoing Jun thru Dec	2f	2c	20' x 20' Platform	Construct new platform and install 2,000 GPM vertical pump to return Redwood City bittern and brines to Newark.
95	CX 4	Routine Maintenance	Ongoing	1b	2b		Replace existing 18" pipe and gate (First Slough to Bay Water Pond).

<sup>1</sup>All routine grading of levee top to provide discing and rip-rapping are routine, preventive maintenance activities unless otherwise identified.

<sup>2</sup>Many activities identified in the work plan are outside COE/BCDC authority/jurisdiction. These are identified in the work plan for completeness and information only. Where there is tentative agreement between COE/BCDC and Cargill that these activities are outside the jurisdiction area, these areas are marked "N/A". The Corps and BCDC will make the final determination.



## SUPPORTING TEXT

### 2002-2003 CARGILL SOLAR SALT MAINTENANCE AND SYSTEM IMPROVEMENT WORK PLAN

April 2002

As noted in the letter transmitting this report, this year's focus will be on operations in Cargill's Redwood City Plant. The proposed work will support Cargill's continued efforts to interconnect the Redwood City Plant and our major salt production and refining complex in Newark. The interoperability of both plants will be critical for continued solar salt operations. In addition, work will continue on seven pump platforms that were highlighted in last year's report. In that report we discussed the reconstruction and remodeling of eight platforms to support new pumps that were replacing outdated pumps or pumps with insufficient capacity. During the detailed review and design efforts, Cargill's operations staff was able to combine the functions of two of those platforms onto one platform, the Transbay pump platform. As a result, the "Little Joe" pump and platform are not a part of this submittal. In order to manage construction and to efficiently manage the delivery of materials, last year's submittal required heavy construction trades to build timber platforms, strengthen bulkheads, and deepen wet wells under the platforms. The work this year will involve mechanical and electrical contractors to install the new pumps and reconnect the electrical wiring to the pump motors. As a result, reviewers will note a fair amount of overlap in the descriptions of work for the past maintenance year, 2001-2002 and this upcoming year, 2002-2003.

#### A. THE WORK IN REDWOOD CITY IS DETAILED AS FOLLOWS:

1. Construction of a 16-Inch Brine Line Through the Redwood City Plant This line, over 22,000 feet in length, is the western segment of the 16-inch line that will ultimately deliver bitterns and brines from the Redwood City Plant to Plant 2 in Newark. As with current construction, the pipeline will be placed on the edge of levees in the Redwood City plant. The general location of the pipeline will be on the inside shoulder of internal levees, away from public view. In areas near the public access trail by ponds S5 and 3 in Redwood City, the line will again be placed on the inside of the levee, on Cargill fee lands.

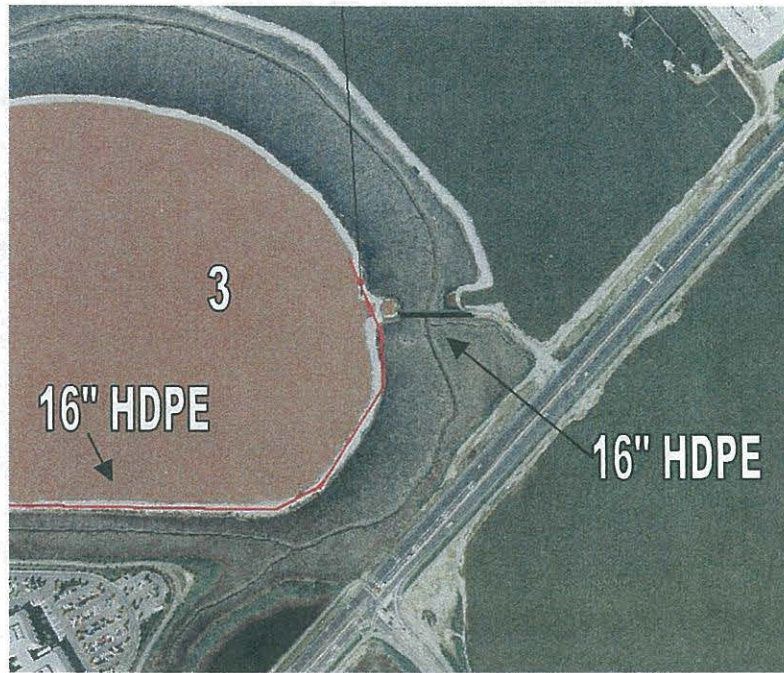




#### REDWOOD CITY BRINE LINE

The pipe will be constructed of 16-inch high-density polyethylene plastic material (HDPE). This type of material is being used extensively in all types of public works construction in Northern California. The pipe lengths are comparatively lightweight and can be connected by a high heat-welding machine that literally melts the segments together. This year's proposed construction activity will bring the line south through the plant to Pond 2, near the western terminus of the Dumbarton Bridge. There the line will connect to a pump and platform currently under construction and authorized in last year's approval. The crossing of Ravenswood Slough, which is in the Commission's San Francisco Bay jurisdiction, will be by directional drilling, the construction technique successfully used in the 2001-2002 efforts. Since that crossing will be in addition to an existing, permitted crossing, a permit amendment will be required for the new crossing.





### DIRECTIONAL DRILLING FOR RAVENSWOOD SLOUGH

The Ravenswood pump will deliver the biterns and brines through a 30-inch HDPE line buried in the northern levee of Pond SF2. That line will, in turn, connect to the existing Transbay pipeline that crosses the Dumbarton Strait and terminates at the newly remodeled Transbay platform.

2. Install and Put into Service a New Redwood City Brine Pump In order to “push” or pump brines and biterns back to the Newark Plant, a 2,000 GPM booster pump will be placed in the heart of the Redwood City Plant site, nearby Crystallizer 9. This pump will service the 16-inch line discussed in the preceding text.
3. Construct a Division Levee in Pond 7c, Redwood City This 800 lineal foot levee will assist in the simultaneous movement of brines and biterns and allow more efficient management of both liquids. The southern portion of Pond 7c functions as a “donut” (in salt production parlance). This small area provides a channel to distribute high salinity brines to the Redwood City plant. By subdividing this donut, with a very small, internal levee, both brines and biterns can be moved simultaneously.



REDWOOD CITY DIVISION LEVEE POND 7-C

4. Construct a Division Levee in Pond S5, in Redwood City  
Similarly, this small internal levee, which will be over 1,000 feet long, will also allow for the simultaneous movement of brines and bitterns through Pond S5. This pond is used more for the transport of brines rather than evaporation, due to its very small size.



REDWOOD CITY DIVISION LEVEE POND S-5

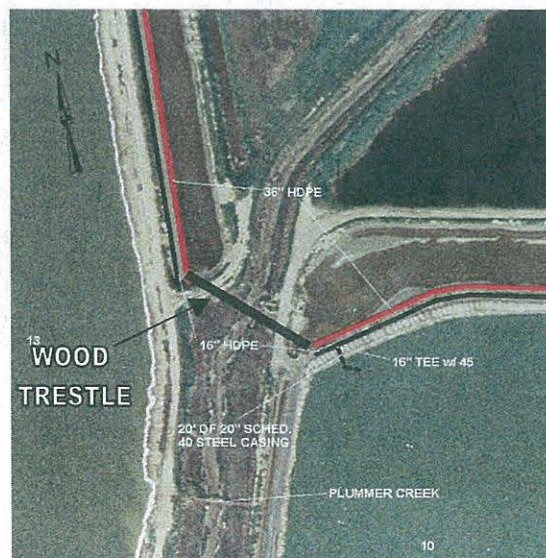


## B. PLUMMER CREEK CROSSING

As noted in the letter transmitting this report, the most noteworthy project on our East Bay salt ponds is the proposed wooden trestle crossing Plummer Creek. We have an existing marine crossing for transport of brines across Plummer Creek, and at the time when the 2001-2002 work plan was submitted, we had planned to use that existing crossing for the new brine lines. The existing crossing, however, proved to be undersized and inadequate.

The existing marine crossing could have been replaced using an open dredge cut across the slough, which would have resulted in minimal temporary impacts to the slough. However, we continued to search for alternatives that would further minimize impacts to the slough and surrounding marsh. Horizontal boring was not feasible in this location because of the limited upland working area and the number of angles that would have been required to place the brine lines on top of exiting levees.

The best alternative would be to install a small trestle crossing above the slough to support the 36" and 17" brine lines across Plummer Creek at its narrowest point. The only construction within BCDC jurisdiction will be the installation of 4 wooden piles to support the trestle and the trestle itself. The piles will be small ones, 12-inches in diameter. No embankment fill would be required in Plummer Creek, and the trestle structure will not obstruct any recreational use. To mitigate the 1,200-square-foot shadow created by the trestle, we propose to remove existing structures that are no longer in service as well as significant deposits of debris along Plummer Creek and Mowry Slough. Those structures have been measured and photographed for the record. One has been removed and one will be removed when the trestle is constructed, using the outside contractor's work force.



PLUMMER CREEK CROSSING



This task is being included in this year's maintenance report and will require an amendment to San Francisco Bay Conservation and Development Commission Permit No. 4-93. That amendment process is underway concurrently.

We believe that the pilings needed to support the trestle are covered under Section 10 of the Corps regulations and can be authorized by a letter of permission. That issue will be discussed with the Corps of Engineers staff.

### C. COYOTE INTAKE PLATFORM AND NEW PUMPS

The expansion of this important element of infrastructure was noticed in last year's work plan and is further referenced in the addendum letter. The work proposed for the 2002-2003 maintenance year is the installation of two new 30,000 gpm pumps on the enlarged platform. The ability to intake brines even during low tides is an important element of this proposal.







#### D. EDEN LANDING RESTORATION PROJECT

The Cargill dredge, the *Mallard* has been working in the Baumberg system, in support of the Eden Landing Restoration project. In conjunction with the sale of the former Baumberg Plant site Cargill donated 400 hours of dredge time to assist in bringing tidal waters to the restoration site. The work underway now is to construct a new levee along the historic alignment of North Creek. This new tidal channel will be connected to the major flood control channel to bring tidal waters into the Eden Landing Restoration site. The dredge entered the Baumberg system via a dredge lock at Pond 8a. That lock was constructed in 1986 and replaced a lock in a more sensitive location. The entry, from an adjoining flood control channel, was very well done. Agency staff have reviewed the lock and found negligible disturbance to the surrounding marsh, the result of continued application and improvement of our "Best Management Practices," or BMPs.



### MALLARD DREDGING NORTH CREEK

For purposes of this report, we anticipate the dredge remaining in the Baumberg system for the next few months. Following completion of the dredge's work in the new North Creek tidal channel, the dredge will move a short distance to the north and begin work on an additional, new tidal channel that will parallel Mt. Eden Creek. This work will be done in cooperation with the California Department of Fish and Game and the East Bay Regional Park District. The other work in the Baumberg system represents typical system maintenance activities.

### E. MOWRY SLOUGH BAY WATER INTAKE

In order to reduce dependence upon the treated, public water supply provided by the Alameda County Water District, the existing bay water intake at Mowry Slough has to be maintained on a more regular basis. In order to do that safely, the existing pads for maintenance of the gates need to be regraded, compacted and improved to support a small backhoe. The backhoe will be used to remove debris that continually clogs the intake gates. By providing a more reliable source of comparatively clean bay water for internal, plant usage, the use of domestic water can be reduced.







TRASH RACK FOR INTAKE GATES



CHANNEL TO BE DEEPEINED

Other maintenance activities are similar to those proposed in the past for the Alviso system.

